

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/567,339	HARA ET AL.
	Examiner	Art Unit
	NIKESH PATEL	2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 25 May 2011.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 27-34 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 27-34 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date Mar. 9, 2011, Apr. 5, 2011, May 25, 2011.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

***Detailed Action***

***Response to Arguments***

1. Applicant's arguments filed on May 25, 2011 with respect to claims 27 - 34 have been considered but are moot in view of the new ground(s) of rejection. Claims 1 – 26 are canceled.

***Information Disclosure Statement***

2. The information disclosure statements filed on Mar. 9, 2011 and May 25, 2011 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it had included Japanese office actions without English translations, and the engineer does not know Japanese language. Please provide English translation for considerations. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 27 and 31 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The phrase, “N being an integer of 2 or larger” is found in claims 27 and 31, the specification does not describe the subject matter.

The phrase, “weigh-related information” is found in claims 27 and 31, the specification does not describe the subject matter.

The phrase, “the weight-related information is common to the plurality of frequencies”, is found in claims 27 and 31, the specification does not describe the subject matter.

Claims 28 – 30 and 32 – 34 are also rejected under 35 U.S.C. 112, first paragraph due to their dependency on claims 27 and 31 respectively.

Applicant is required to cancel the new matter in the reply of this Office Action.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 27 - 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trikkonen US PGPub: US 2004/0002364 A1 Jan. 1, 2004, and in view of Walton US PGPub: US 2003/0125040 A1 Jul. 3, 2003.

**Regarding claim 27**, Trikkonen discloses,

a radio communication method by a radio communication system (Fig. 2) in which output signals are generated from a plurality of information signals and then transmitted respectively at a plurality of different frequencies to a system of a communication partner from N antennas, N being an integer of 2 or larger (Fig. 2, item 105), the method comprising:

receiving control information transmitted by the system of the communication partner (the loop transmissions contain control information – Figs 4a, 4b, paragraphs 0091, 0304, 0307); and

transmitting transmission signals respectively at the plurality of frequencies from the N antennas based on the received control information, the transmission signals each being generated based on a first operation result (transmitter is arranged to multiply a stream of symbols to be transmitted by transforms to generate a resultant transformation used in the generation of beams, along with different modulations – paragraphs 0012 – 0013, 0077, 0164, 0284. At the same

time use of different modulations – paragraph 0108), which is obtained by multiplying a first information signal by a first N-dimensional weight vector, and a second operation result, which is obtained by multiplying a second information signal by a second N-dimensional weight vector (paragraphs 322, 140, and 136).

Transmitter is arranged to multiply a stream of symbols to be transmitted by transforms to generate a resultant transformation used in the generation of beams, along with different modulations – paragraph 0012 – 0013, 0077, 0164, 0284),

wherein the control information includes weight-related information including a set of the first N-dimensional weight vector and the second N-dimensional weight vector (paragraphs 0140,0136, 0322, 0140, 0309, 0322, at the same time paragraph 108 mentions the use of different modulations; paragraphs 0118, 0256, 0248, 0252),

but, does not clearly teach, the weight-related information is “common” to the plurality of frequencies.

Walton teaches, multiple-access multiple-input multiple-output MIMO communication system, and simultaneous transmission. The data streams may be simultaneously transmitted by the base station from transmit antennas and targeted to one or more terminals, each equipped with receive antennas (Figs. 1 - 11C, paragraphs 0004, 0010 – 0015, 0072, 0081, 0082, 0242, 0338, 0353,

0385, 0462, 0467, 0509). A common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the transmitting and receiving method of Trikkonen (Trikkonen, Fig. 2), wherein, the base transceiver station 2 of Trikkonen, would have incorporated common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187), for the data rate can be increased by transmitting independent information streams from different antennas but using the same channel as defined by frequency, time slot and/or spreading code (Trikkonen, paragraphs 0004, 0005, 0006 and Walton, paragraphs 0004, 0072, 0467).

**Regarding claim 28**, Trikkonen discloses,

the radio communication method according to claim 27, wherein: the first information signal and the second information signal include one of a set of signals modulated by different modulation schemes and a set of signals encoded by different encoding methods (transmitter is arranged to multiply a stream of symbols to be transmitted by transforms to generate a resultant transformation used in the generation of beams, along with different modulations – paragraphs

0012 – 0013, 0077, 0164, 0284. At the same time use of different modulations – paragraph 0108).

**Regarding claim 29**, Trikkonen discloses all the claimed features,

but, does not clearly teach, the weight-related information is “common” to the plurality of frequencies.

Walton teaches, multiple-access multiple-input multiple-output MIMO communication system, and simultaneous transmission. The data streams may be simultaneously transmitted by the base station from transmit antennas and targeted to one or more terminals, each equipped with receive antennas (Figs. 1 - 11C, paragraphs 0004, 0010 – 0015, 0072, 0081, 0082, 0242, 0338, 0353, 0385, 0462, 0467, 0509). A common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the transmitting and receiving method of Trikkonen (Trikkonen, Fig. 2), wherein, the base transceiver station 2 of Trikkonen, would have incorporated common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs

0105, 0126, 0187), for the data rate can be increased by transmitting independent information streams from different antennas but using the same channel as defined by frequency, time slot and/or spreading code (Trikkonen, paragraphs 0004, 0005, 0006 and Walton, paragraphs 0004, 0072, 0467).

**Regarding claim 30**, Trikkonen discloses all the claimed features,

but, does not clearly teach, the weight-related information is “common” to the plurality of frequencies.

Walton teaches, multiple-access multiple-input multiple-output MIMO communication system, and simultaneous transmission. The data streams may be simultaneously transmitted by the base station from transmit antennas and targeted to one or more terminals, each equipped with receive antennas (Figs. 1 - 11C, paragraphs 0004, 0010 – 0015, 0072, 0081, 0082, 0242, 0338, 0353, 0385, 0462, 0467, 0509). A common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the transmitting and receiving method of Trikkonen (Trikkonen, Fig. 2), wherein, the base transceiver station 2 of Trikkonen, would

have incorporated common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187), for the data rate can be increased by transmitting independent information streams from different antennas but using the same channel as defined by frequency, time slot and/or spreading code (Trikkonen, paragraphs 0004, 0005, 0006 and Walton, paragraphs 0004, 0072, 0467).

**Regarding claim 31**, Trikkonen discloses,

a radio communication system (Fig. 2) in which output signals are generated from a plurality of information signals and then transmitted respectively at a plurality of different frequencies to a system of a communication partner from N antennas, N being an integer of 2 or larger (Fig. 2, item 105), comprising:

reception means for receiving control information transmitted by the system of the communication partner (the loop transmissions contain control information – Figs 4a, 4b, paragraphs 0091, 0304, 0307); and

transmission means for transmitting transmission signals respectively at the plurality of frequencies from the N antennas based on the received control information, the transmission signals each being generated based on a first operation result (transmitter is arranged to multiply a stream of symbols to be

transmitted by transforms to generate a resultant transformation used in the generation of beams, along with different modulations – paragraphs 0012 – 0013, 0077, 0164, 0284. At the same time use of different modulations – paragraph 0108), which is obtained by multiplying a first information signal by a first N-dimensional weight vector, and a second operation result, which is obtained by multiplying a second information signal by a second N- dimensional weight vector (paragraphs 322, 140, and 136. Transmitter is arranged to multiply a stream of symbols to be transmitted by transforms to generate a resultant transformation used in the generation of beams, along with different modulations – paragraph 0012 – 0013, 0077, 0164, 0284),

wherein the control information includes weight-related information including a set of the first N-dimensional weight vector and the second N-dimensional weight vector(paragraphs 0140,0136, 0322, 0140, 0309, 0322, at the same time paragraph 108 mentions the use of different modulations; paragraphs 0118, 0256, 0248, 0252),

but, does not clearly teach, the weight-related information is “common” to the plurality of frequencies.

Walton teaches, multiple-access multiple-input multiple-output MIMO communication system, and simultaneous transmission. The data streams may

be simultaneously transmitted by the base station from transmit antennas and targeted to one or more terminals, each equipped with receive antennas (Figs. 1 - 11C, paragraphs 0004, 0010 – 0015, 0072, 0081, 0082, 0242, 0338, 0353, 0385, 0462, 0467, 0509). A common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the transmitting and receiving method of Trikkonen (Trikkonen, Fig. 2), wherein, the base transceiver station 2 of Trikkonen, would have incorporated common coding and modulation scheme may be used for all transmission channels selected for data transmission (Figs. 3B, 3D paragraphs 0105, 0126, 0187), for the data rate can be increased by transmitting independent information streams from different antennas but using the same channel as defined by frequency, time slot and/or spreading code (Trikkonen, paragraphs 0004, 0005, 0006 and Walton, paragraphs 0004, 0072, 0467).

**Regarding claim 32**, it is similar to claim 28 above, and is rejected on the same grounds.

**Regarding claim 33**, it is similar to claim 29 above, and is rejected on the same grounds.

**Regarding claim 34,** it is similar to claim 30 above, and is rejected on the same grounds.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Contact Information**

Any inquiry concerning this communication from the examiner should be directed to Nimesh Patel at (571) 270-1228, normally reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael, Perez-Gutierrez, can be reached at (571) 272-7915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Nimesh Patel /  
Patent Examiner (2617)